

CLAIMS

1. A hybrid protein comprising two coexpressed amino acid sequences forming a dimer, each comprising:

a) at least one amino acid sequence selected from the group consisting of a homomeric receptor, a chain of a heteromeric receptor, a ligand, and fragments thereof which retain the ligand-receptor binding capability; and

b) a subunit of a heterodimeric proteinaceous hormone, or fragments thereof which retain the ability of the subunit to form a heterodimer with other subunits thereof;

wherein sequences (a) and (b) are bonded directly or through a peptide linker, and in which the sequence (b) in each of said two coexpressed sequences are capable of aggregating to form a dimer complex.

2. A hybrid protein in accordance with claim 1, wherein said sequence (a) is selected from the group consisting of TBP1, TBP2 or fragments thereof still containing the ligand binding domain; the extracellular domain of the IFN α / β receptor or the IFN γ receptor; a gonadotropin receptor or extracellular fragments thereof; antibody light chains or fragments thereof, optionally associated with the respective heavy chains; antibody heavy chains or fragments thereof; antibody Fab domains; and IL-6, IFN- β , TPO or fragments thereof.

3. A hybrid protein in accordance with claim 1, wherein said sequence (b) is selected from the group consisting of subunits of hCG, FSH, LH, TSH or inhibin, and fragments thereof.

4. A hybrid protein in accordance with claim 1, wherein sequence (a) is ^{joined} linked to the amino terminus of sequence (b).

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5. A hybrid protein in accordance with claim 1,
wherein sequence (a) is ^{joined} linked to the carboxy terminus of
~~sequence (b).~~

6. A hybrid protein in accordance with claim 1,
wherein said two coexpressed amino acid sequences each include
the sequence for TBP1 or the fragment thereof corresponding to
amino acid residues 20-161 or 20-190 of TBP1, as sequence (a)
and the respective α and β subunits of hCG or fragments
thereof, as sequence (b).

7. A hybrid protein in accordance with claim 1,
wherein said two coexpressed amino acid sequences each include
the extracellular domain of a gonadotropin receptor as sequence
(a) and the respective α and β subunits of a gonadotropin as
sequence (b).

8. A hybrid protein in accordance with claim 7,
wherein said sequence (a) is the FSH receptor extracellular
domain and sequence (b) is a subunit of FSH.

9. A hybrid protein in accordance with claim 7,
wherein said sequences (a) and (b) are linked with a peptide
linker.

10. A hybrid protein in accordance with claim 9,
wherein said peptide linker has an enzyme cleavage site.

11. A hybrid protein in accordance with claim 10,
wherein said enzyme cleavage site is a thrombin cleavage site.

12. A hybrid protein in accordance with claim 10,
wherein said enzyme cleavage site is recognized and cleaved by
an enzyme which is found in the ovary.

13. A hybrid protein in accordance with claim 9,
wherein said peptide linker serves as a flexible hinge.

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14. A hybrid protein in accordance with claim 1,
wherein one or more covalent bonds between the two subunits (b)
are added.

15. A DNA molecule encoding a hybrid protein in
accordance with claim 1.

16. An expression vector containing a DNA molecule
in accordance with claim 15.

17. A host cell containing an expression vector in
accordance with claim 16 and capable of expressing said hybrid
protein.

18. A method for producing hybrid protein comprising
culturing a host cell in accordance with claim 17 and
recovering the hybrid protein expressed thereby.

14 19. A pharmaceutical composition comprising a hybrid
protein in accordance with claim 1 and a pharmaceutically
acceptable carrier and/or excipient.

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20. A method for inducing follicular maturation,
comprising administering a pharmaceutical composition
comprising the hybrid protein of claim 8 to a subject in need
thereof.